

REMARKS

This is in response to the Office Action of June 25, 2007. Claims 1, 2, 4-14, and 16-18 are pending in this application. The present invention involves the transfer of a whole of the size and the shape of an organic thin-film layer. Accordingly, claims 1, 13, 17, and 18 are amended to recite that the method of the present invention involves a non-imagewise transfer of an organic thin-film layer to a receiving surface of a laminate. No new matter is introduced by this Amendment. These amendments to the claims are clarifying, non-narrowing claim amendments, serving to more particularly point out and distinctly claim the invention disclosed in the present application. Claims 1, 2, 4-14, and 16-18 as amended are before the Examiner for reconsideration on their merits.

The present invention

The present invention provides methods for producing organic thin-film devices, such as organic electroluminescence devices that are usable for plate light sources (*e.g.*, full-color displays, backlights and illumination light sources, and light source arrays of printers). Among the significant features of the present method invention are the steps of: peeling a temporary support from a laminate structure to transfer an entire¹ organic thin-film layer to a receiving surface of the laminate; and bonding another laminate (which is a rear-surface electrode or a transparent conductive layer formed on a substrate) to the organic thin-film layer that was transferred onto the laminate structure.

Prior art constituting the technological background of the present invention includes the work of Wolk et al. The Examiner relies upon US 6,194,119 B1 to Wolk et al. ("Wolk") to reject the present claims. The Wolk reference upon which the Examiner relies corresponds to WO 00/41893, which is discussed on page 3 of Applicant's specification. The present invention involves the transfer of a whole of the size and the shape of the organic thin-film

¹ That is, the whole of the size and shape of the thin-film layer is transferred, rather than simply an image or pattern located on the thin-film being transferred.

layer. In contrast, Wolk merely teaches the transfer of a part of the organic thin-film layer (e.g., an image or pattern thereon).

As depicted *e.g.* in Applicant's Figure 1, transfer material in the present invention comprises two components – an organic thin-film layer (112), and a temporary support (111) upon which the organic thin-film layer is adhered. Specification; page 6, lines 13-14; page 19, lines 15-17. The transfer of a surface emitting device is carried out herein by heating with a laminator, an infrared heater, or a roller heater. Specification; page 5, lines 6-8; page 28, lines 15-27. This produces a surface emitting device which has excellent light-emitting efficiency and which is manufactured with high productivity at low cost. The organic thin-film layers in the present invention are remarkably thinner than are thin-film layers obtained by thermal transfer methods employing a laser. This results in excellent uniformity of light emission in the present invention. Specification, page 46, lines 21-27.

Rejection over Wolk

Claims 1, 2, 4-14, and 16-18 were rejected under 35 U.S.C. § 102(b) as being anticipated by US 6,194,119 B1 to Wolk et al. ("Wolk"). Office Action, pages 2-7. The present invention involves the transfer of a whole of the size and the shape of the organic thin-film layer. In contrast, Wolk merely teaches the transfer of a part of the organic thin-film layer. Accordingly, the rejection based on the Wolk reference is respectfully traversed.

Wolk discloses thermal transfer elements and processes for patterning solvent-coated layers and solvent-susceptible layers onto the same receptor substrate. As is clear, for instance, from the Wolk ABSTRACT, Wolk specifically teaches a single or multicomponent transfer layer that is imagewise transferred.

Also, Wolk states that his invention provides new thermal transfer donor elements and *methods of patterning* using thermal transfer donor elements and that his invention provides a method for *patterning a first material and a second material* on a receptor by selectively thermal transfer of the first material and that materials can be *patterned* onto substrates by selective thermal transfer of the materials and that the transfer layers materials can be

patterned via selective thermal transfer. Column 1, lines 56-59; column 2, lines 14-17; column 4, lines 29-31; column 5, lines 50-51.

Wolk also discloses patterning a first material and a second material on a receptor by *selectively thermally transferring* the first material proximate to the second material on the receptor from a first donor element, and a method for patterning material including the step of *thermally transferring selected portions* of a first transfer layer. See, for instance, Wolk claims 2 and 20.

The object of the Wolk invention is to provide methods of patterning using thermal transfer donor elements in place of conventional photolithographic patterning in producing organic electroluminescent devices, and also to provide thermal transfer donor elements used therefor. This is clear, *e.g.*, from statements in lines 39-54 in column 1 of the reference.

In contrast to Wolk, the present invention provides a method for producing an organic thin-film device, which method is not a vapor deposition method. The present method can be applied to organic thin-film devices to which vapor depositions methods cannot be applied. Specification, pages 1, line 28 to page 3, line 23.

It is clear, therefore, that the difference in technical features between Wolk and the present invention are significant due to differing technological objectives. None of independent claims 1, 13, 17 and 18 herein – all of which now require “peeling ... to non-imagewise transfer said organic thin-film layer to said receiving surface of said first laminate; and ... bonding a second laminate ... to said organic thin-film layer non-imagewise transferred onto said first laminate” – is anticipated by the Wolk disclosure. Dependent claims 2, 4-12, 14, and 16 distinguish over the Wolk disclosure at least for the same reasons as do the independent claims from which they respectively depend. Withdrawal of the rejections of claims 1, 2, 4-14, and 16-18 as being anticipated by Wolk is in order and is earnestly solicited.

Rejection over Shibata

Claims 1, 2, 4, 7-14, 17, and 18 were rejected under 35 U.S.C. § 102(e) as being anticipated by US 2002/0127877 A1 to Shibata et al. ("Shibata"). Office Action, pages 7-11. The rejection is respectfully traversed.

Applicants had pointed out that the present invention provides an organic thin-film device by bonding a second laminate comprising a substrate and at least a rear-surface electrode or a transparent conductive layer formed on the substrate to the organic thin-film layer transferred onto the first laminate, whereas Shibata discloses merely the transferring of the organic thin film without bonding thereof onto the second laminate. The Examiner refers to paragraphs [0088] and [0089] of the Shibata reference. However, that disclosure by Shibata is that a "back side electrode may be disposed on the whole surface or a part of the organic thin films." Shibata does not teach "bonding a second laminate comprising a substrate and ... a rear-surface electrode ... formed on said substrate to said organic thin-film layer." The Shibata disclosure is missing the substrate recited in step (c) of Applicant's method.

Accordingly, the presently claimed invention is not taught by the Shibata disclosure and withdrawal of the anticipation rejection is respectfully requested.

Conclusion

The rejections of record are not sustainable with respect to the invention presently claimed. Withdrawal of all rejections of record, and passage of this application to Issue, are earnestly solicited. If there are any questions, the Examiner is respectfully requested to contact Richard Gallagher (Registration No. 28,781) at (703) 205-8008.


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If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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